

WHAT IS CLAIMED IS:

1. A method for applying a lubricant to a rolling bearing, comprising the steps of:

preparing a prescribed liquid volume discharge device
5 having at least one discharge port;

locating said discharge port directly above and sufficiently close to a rolling element of said rolling bearing;
and

transferring a prescribed amount of said lubricant from
10 said discharge port to said rolling element in an oil droplet form, to thereby apply said lubricant to the interior of said rolling bearing.

2. A method according to claim 1, wherein said rolling
15 elements are respectively applied by said discharge ports, the number of which is equal to that of said rolling elements of said rolling bearing.

3. A method according to claim 1, wherein said
20 discharge port is performed with an oil repellent treatment.

4. A method according to claim 1, wherein the application amount of the lubricant per rolling bearing is set in the range of 0.8 to 2.4 μ l.
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5. A method for applying a lubricant to a rolling bearing, comprising the steps of:

disposing a rolling bearing on a predetermined position;

rotating said rolling bearing about a center axis of said rolling bearing as a rotation axis;

detecting a position of a rolling element of said rolling bearing by means of a sensor;

5 stopping the rotation of said rolling bearing when said sensor detects the position of said rolling element;

relatively positioning at least one lubricant discharge port with respect to said rolling element so that said lubricant discharge port is located above said rolling element;

10 transferring a prescribed amount of said lubricant from said discharge port to said rolling element so that lubricant is applied to a gap between a raceway-surface of a bearing ring of said rolling bearing and said rolling element, a retainer and said rolling element in an oil droplet form.

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6. A method according to claim 5, wherein said rolling elements are respectively applied by said discharge ports, the number of which is equal to that of said rolling elements of said rolling bearing.

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7. A method according to claim 5, wherein said discharge port is performed with an oil repellent treatment.

25 8. A method according to claim 5, wherein the application amount of the lubricant per rolling bearing is set in the range of 0.8 to 2.4 μ l.

9. A lubricant applying apparatus for applying

lubricant to a rolling bearing, comprising:

a rotating table disposing said rolling bearing thereon,
and rotating said rolling bearing about a center axis thereof
as a rotation axis;

5 a sensor detecting a position of a rolling element of said
rolling bearing during the rotation of said rolling bearing;

a lubricant discharge means having at least one discharge
port, said lubricant discharge means discharging a prescribed
amount of said lubricant in a state that said lubricant
10 discharge port is located above said rolling element; and

an application control means receiving a signal
representing that said sensor detects the position of said
rolling element, relatively approaching said lubricant
discharge means to said rolling element after stopping the
15 rotation of said rotating table, and providing a discharge
command to said lubricant discharge means.

10. A lubricant applying apparatus according to claim
9, wherein said discharge port of said lubricant discharge means
20 is performed with an oil repellent treatment.

11. A lubricant applying apparatus according to claim
9, wherein said lubricant discharge means includes said
discharge ports, the number of which is equal to that of said
25 rolling elements of said rolling bearing.

12. A lubricant applying apparatus according to claim
9, further comprising:

a lubricant pressurized sending means sending said lubricant under pressure via a filter filtering said lubricant.

13. An inspecting apparatus of a lubricant applied
5 condition of a rolling bearing, which inspects whether or not a prescribed amount of lubricant is discharged from a lubricant application device for injecting said lubricant in the interior of said rolling bearing, comprising:

a projective element irradiating an illuminant light to
10 a lubricant position of said rolling bearing where said lubricant is discharged from a discharge port of said lubricant application device; - - -

a photoreceptive element receiving a reflected light reflected when said lubricant is disposed on said lubricant
15 position; and

a determining means determining whether or not said lubricant is applied to said rolling bearing based on an output from said photoreceptive element.

20 14. An inspecting apparatus according to claim 13, wherein said projective element irradiates a laser beam between said discharge port of said lubricant application device and said rolling bearing, and

said photoreceptive element is located on an optical axis
25 of the reflected laser beam that is reflected by said lubricant when said lubricant is discharged from said discharge port.

15. An inspecting apparatus according to claim 13,

wherein said lubricant includes an addition agent emitting fluorescence,

said projective element is a luminance having a wavelength that makes said addition agent of said lubricant emit
5 fluorescence, and

said photoreceptive element receives the fluorescence light emitted from said lubricant.

16. An inspecting apparatus according to claim 15,
10 wherein said projective element is disposed between said photoreceptive element and the rolling bearing and concentrically with a center axis of the rolling bearing, and
said projective element includes an illuminant light reflecting plate shutting off the illuminant light irradiated
15 to a photoreceptive element side.

17. An inspecting apparatus according to claim 13,
wherein said projective element is a laser beam incoming with an incident angle not more than 30° with respect to a plane
20 perpendicular to a center axis of the rolling bearing.

18. An inspecting method of a lubricant applied condition of a rolling bearing, which inspects whether or not a prescribed amount of lubricant is discharged from a lubricant
25 application device for injecting said lubricant in the interior of said rolling bearing, comprising the steps of:

irradiating an illuminant light to a lubricant position of said rolling bearing where said lubricant is discharged from

a discharge port of said lubricant application device;
receiving a reflected light reflected when said lubricant
is disposed on said lubricant position; and
determining whether or not said lubricant is applied to
5 said rolling bearing based on an output of the reflected light.